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William A. Watkins				5d. PROJECT NUMBER WHOI proj. # 13056900	
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14. ABSTRACT The marine mammal sound work supported by the last component of this Grant included work on monitoring calls produced by deepwater whales of the North Pacific, as well as organization of a digital archive of the WHOI marine animal sound collections. The program of monitoring the calling whales across the North Pacific using U.S. Navy SOSUS and other systems has continued to be productive, with regular measures of the seasonal distribution of the different whale species. The organization of the digital acoustic data was successfully completed. Both components of this program have provided important new information about the acoustic behavior of these calling marine species.					
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15 August 2003

Dr. Robert C. Gisiner, Code 342
Marine Mammal Science and Technology
Office of Naval Research
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Reference ONR Grant #N00014-02-10569

Dear Dr. Gisiner,

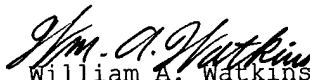
This is the final report for the marine mammal sound work supported by the last component of this Grant. This effort included work on monitoring calls produced by deepwater blue, fin, and humpback whales of the North Pacific, as well as organization of a digital archive of the WHOI marine animal sound collections. The program of monitoring the calling whales across the North Pacific using U.S. Navy SOSUS and other systems continued to be productive with regular measures of the seasonal distribution of the different whale species. The organization of the digital acoustic data was successfully completed. Both components of the program have provided important new information about the acoustic behavior of these marine species.

The monitoring program completed its seventh year of uninterrupted assessments of the seasonal distribution of the calling whales across the North Pacific basin. Fin whales continued to be heard from localized concentrations of calling whales especially in the NE and SE Regions with peak calling in mid winter. Blue whales were scattered across the Regions but were more numerous in the NW, and there was some calling relearned as well as migratory movement southeastward after the fall peak calling period. Humpbacks in localized groups usually began singing in the NC Region in December, continued calling in the SE Region over the next four months, and then ended calling back in the NC Region in May.

The WHOI marine sound archives include databases for field recordings over 50 years of ocean research, organized metadata attached to each digital file, relevant literature reference material, and selected sound cuts from individuals of identified species. The marine animal sound data files have proved extremely valuable in our comparisons of compilations of characteristic sound repertoires for the different species.

These have been importantly useful programs.

Sincerely,


William A. Watkins

Publications and reports from this program (#N00014-02-10569):

Watkins, William A., and Mary Ann Daher. 2002 (monthly). Whale calling in the North Pacific: comparison with previous years. Monthly Summary Reports for CNO/N45-ONR-NMFS/NOAA-SPAWAR Analysis of the current month's data on calling whales monitored at NOPF, Whidbey Is, WA. Text 1 p., 12 pp graphic displays each. 12 unpublished Reports.

Watkins, William A., Mary Ann Daher, and Joseph E. George. 2001. Numbers of calling whales in the North Pacific. Technical Report No. WHOI-2001-16, Woods Hole Oceanographic Institution, Woods Hole MA 02543, 37 pp.

Moore, Sue E., William A. Watkins, Jeremy Davies, Mary Ann Daher, and Marilyn Dahlheim. 2002. Blue whale habitats in the Northwest Pacific: analysis of remotely-sensed data using a Geographic Information System. *Oceanography* 15(3): 20-25.

Watkins, William A., Mary Ann Daher, and Joseph E. George. In press. Year to year variations in whale calling in the North Pacific. *U.S. Navy Journal of Underwater Sound. Biologics Issue*.

Watkins, William A., Mary Ann Daher, Joseph E. George, and David Rodriguez. Submitted. 52-Hz whale calls from unique source tracked eleven years in the North Pacific. *Oceanography*, 21 pp.